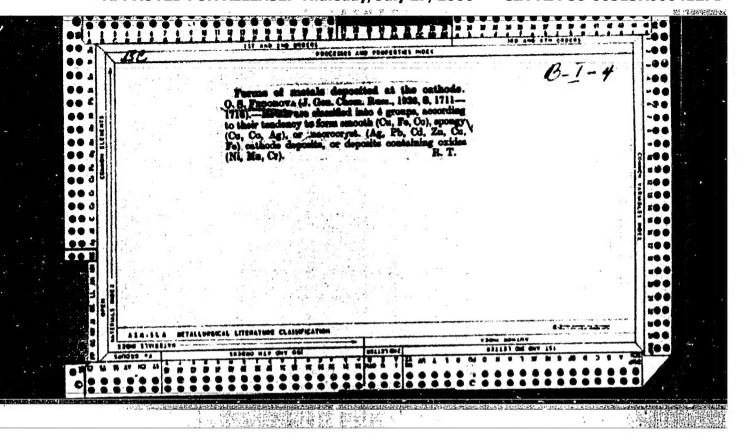
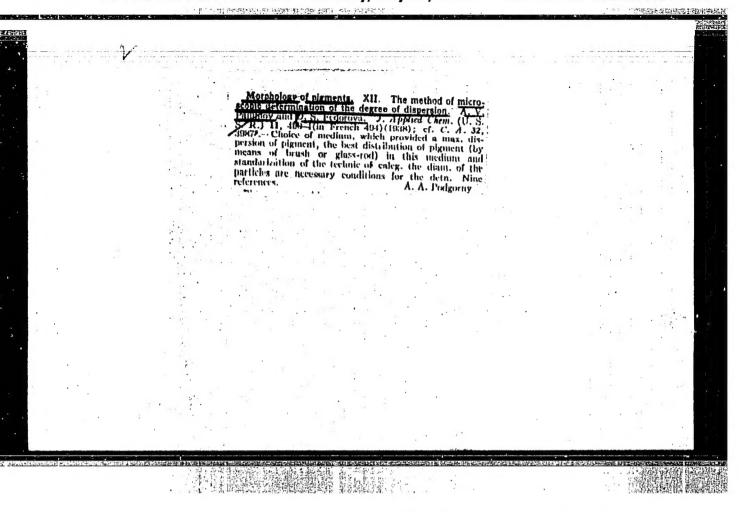
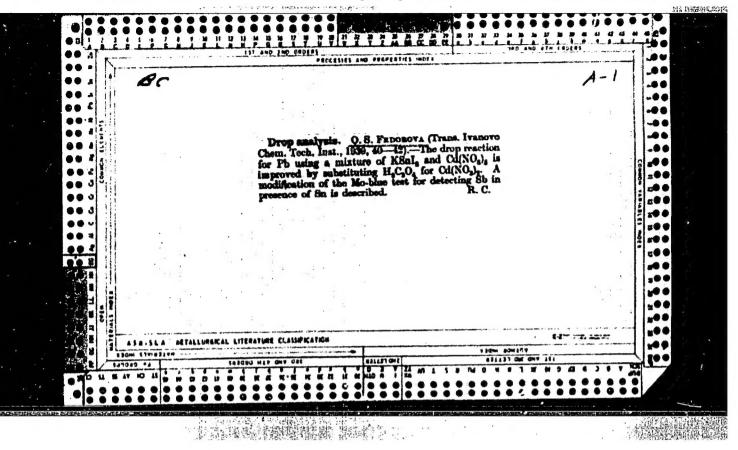
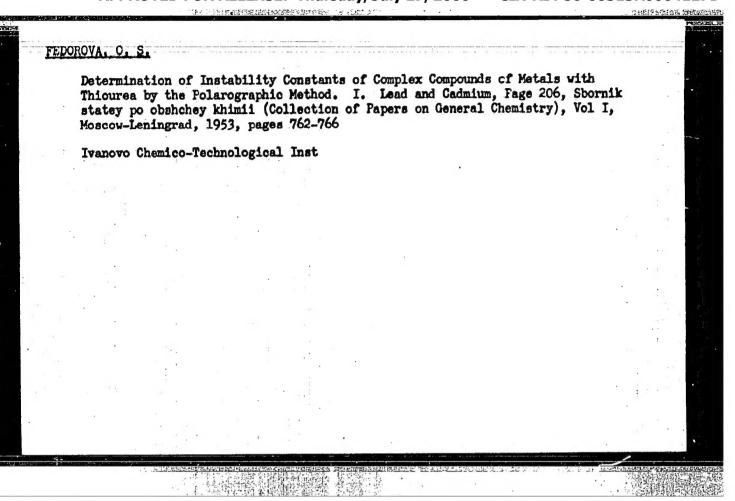


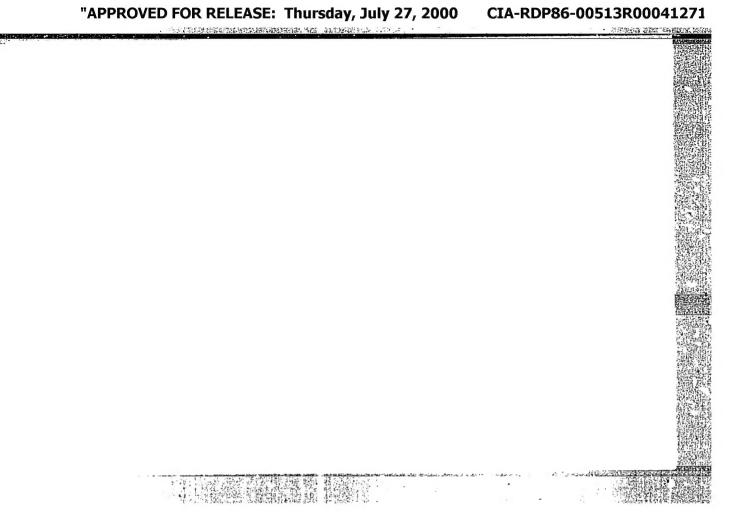
"APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041271



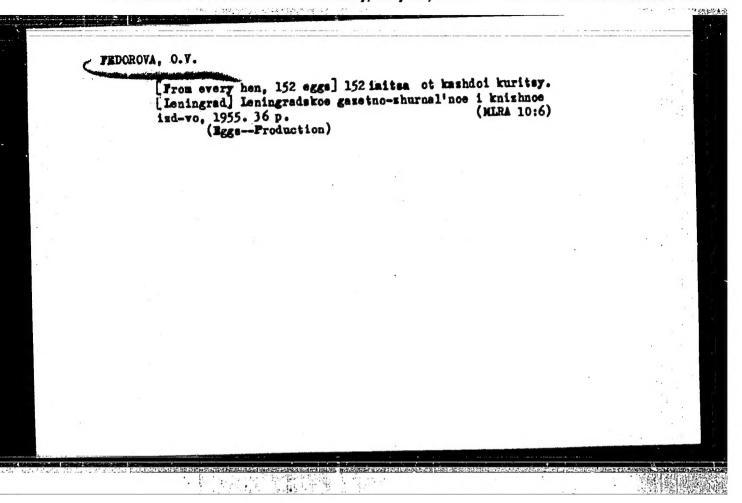








USSR/Chemistry - Analysis Pub. 151 - 11/36 Card 1/1 Fedorova, O. S. Authors Composition and instability constants of complex metal-thiourea compounds Title determined by the polarographic method. Part 2.-Periodical : Zhur. ob. khim. 24/1, 62-64, Jan 1954 The structure and stability of Zn, Ni and Bi complexes were polarographically Abstract investigated at a pH of about 0.35. A reduction in stability followed by a reduction in the covalent properties of various metal ions during their contact with thioures was established. The coordination number and the instability constants of a Bi-thiourea complex were determined. The reversibility of the Bi ion discharge process was determined on the basis of experimental data. Six USSR references (1949-1953). Tables: graph. Institution: The Chemical-Technological Institute, Ivanovo : July 4, 1953 Submitted



ACCESSION NR: AP4028545

S/0191/64/000/004/0020/0023

AUTHOR: Kerber, M. L.; Fedotova, O. Ya.; Losev, I. P. (Deceased)

TITLE: Radiation resistance of aromatic and arylaliphatic polyamides

SOURCE: Plasticheskiye massy*, no. 4, 1964, 20-23

TOPIC TAGS: aromatic polyamide, aliphatic polyamide, arylaliphatic polyamide, radiation resistance, gamma irradiation, thermomechanical property, molecular weight, specific viscosity, polytherephthalamide, cross linkage

ABSTRACT: The radiation resistance of aromatic, aliphatic and arylaliphatic polyamides was investigated. The radiation resistance of polyamides (poly-p-phenyleneterephthalamide, poly-p-phenylenesebacinamide, polydiphenylmethaneterephthalamide and polyin N-dimethyl- ((diphenylmethane)-terephthalamide) was determined by the change in molecular weight (specific viscosity) and the thermomechanical properties under the effect of Co-60 gamma irradiation. The polyterephthalamides are most resistant and 1/2

ACCESSION NR: AP4028545

to gamma radiation; they are also resistant to oxidative destruction at 200C. The predominance of the destruction processes shows up at different integral doses depending on the structure of the backbone of the aromatic polyamides. The parallel course of the processes of degradation and cross linking of polyamides by gamma radiation in air was thus confirmed. Exchanging the aromatic group of the amide for an aliphatic or arylaliphatic reduces the radiation resistance of the polymer. Orig. art. has: 4 figures

ASSOCIATION: None

SUBMITTED: 00

ATD PRESS: 3067

ENCL: 00

SUB CODE: OC. NP

NO REF SOV: 008

OTHER: 006

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APPROVED FOR RELEASE: Thursday, July 27, 2000

CIA-RDP86-00513R00041271(

5/0000/63/000/000/0139/0144

ACCESSION NR: AT4033998

AUTHOR: Fedotova, O. Ya.; Shtil'man, M. I.; Losev, I. P. (Deceased); Bogdanova, V. M.; ZeTentskaya, T. V.

TITLE: Synthesis and conversion of polyamide polynitriles. 1. Synthesis of N-cyanoethylated polyamides

SOURCE: Geterctsepny*ye vy*sokomolekulyarny*ye soyedineniya (Heterochain macro-molecular compounds); sbornik statey. Moscow, Izd-vo "Nauka," 1963, 139-144

TOPIC TAGS: polymer, polyamide, cyanoethylation, cyanoethylated polyamide, solution polycondensation, interphase polycondensation, aromatic diamine, aliphatic diamine, dicyanoethylated aromatic diamine, adipic acid, dicarboxylic acid, polynitrile

ABSTRACT: The authors claim original synthesis of N-cyanoethylated polyamides by solution or interphase polycondensation of N,N'-di-(β -cyanoethyl)-p-phenylene diamine or N,N'-di- β -cyanoethyl)-1,6-hexamethylene diamine with adipic acid or its dichloroanhydride. Solution reactions lasted 7-10 hours (5 hrs. in 0 purified N flow, 2-5 hours in a vacuum) at 160-220C, interphase reactions 30 min. at 180-240C. It was established that N-cyanoethylated polyamides with a predetermined nitrile group content can be derived at polycondensation solution temperatures not $\frac{172}{172}$

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ACCESSION NR: AT4033998

exceeding 160C. Dicyanoethylated aromatic diamines fall almost entirely to participate in the interphase polycondensation, although their aliphatic counterparts react with the dichloroanhydrides of dicarboxylic acids at phase separation boundaries. Orig. art. has: 5 graphs, 2 tables and 4 chemical equations.

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskiy Institut im. D. I. Mendeleyeva (Moscow Institute of Chemical Technology)

SUBMITTED: 12Sep62 DATE ACQ: 30Apr64 ENCL: 00

SUB CODE: OC NO REF SOV: 003 OTHER: 000

Teproving the design of the NII-200 lifting-jack. Stroitel' no.1:14
Ja '59. (Hydraulic jacks)

YES'KINA, T.M., (Arzamasskaya oblasti); FEDOROVA, P.G., (Voroshilovgrad); KOSHINA, M.I., (Stavropol'); BOSHOVIK, I.Ya., doktor meditsinskikh nauk (Moskva); STEPANOVA, P.D., starshaya meditsinskaya sestra(Sochi)

Work of the council of nurses. T.M. Hs'kina and others. Med. sestra no.1:24-27 Ja. 156. (MLRA 9:3)

1. Predsedatel' Soveta meditsinskikh sester (for Yes'kina, Fedorova, Koshina)
(NURSES AND NURSING)

Achrestic anchia. Terap. arkh. 26 no.2:74-77 Mr-Ap '54. (MIRA 7:8)

1. Is gospital 'noy terapevticheskoy kliniki (dir. chlen-korrespondent AMM SSSR prof. Z.I.Unidova) Tashkantskogo meditsinskogo instituta imeni V.M.Molotova.

(AMMIA, HIPPECHRONIC,

*achrestic)

T-5

FEDOROYA,

USSR/General Problems of Pathology - Tumors.

Abs Jour : Ref "hur - Biol., No 4, 1958, 17424

Author

Fedorove, T.L.

Inst Title On Acute Erythremia and Erythroleukemia.

Orig Pub

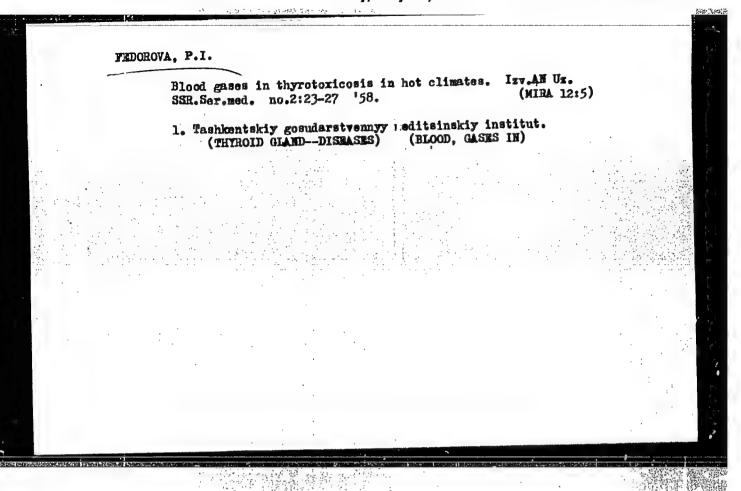
Terapevt. arkhiv, 1956, 28, No 8, 72-74

Abstract

Two cases of acute disease are reported in 16 and 18-year old males, characterized by high fever, lymphadenopathy, hepatosplenomegaly, progressing anemia, elevated ESR, thrombocytopenia and phenomena of hemorrhagic diathesis. In one patient the number of hemocytoblasts in peripheral blood reached 82.5% with a white cell count up to 60,000 per cu mm. There were 68 normoblasts, predominantly orthochromatic, per 100 white cells, and a hemocytoblastic bone marrow. The other patient had 142 erythroblasts (57 proerythroblasts, 25 megaloblasts and 60 normoblasts) per 100 white cells; of them "paraerythroblasts"

Card 1/2

CIA-RDP86-00513R000412711 APPROVED FOR RELEASE: Thursday, July 27, 2000



FEDOROVA, P.I., kand.med.nauk

Some aspects of central nervous function in thyrotoxicosis in a hot climate. Terap. arkh. 30 no.4:81-91 Ap '58. (MIRA 11:4)

1. Iz gospital'noy terapevticheskoy kliniki (dir.-chlen-korrespondent AMN SSSR prof. Z.I.Umidova) Tashkentskogo meditsinekogo instituta.

(CENTRAL MERVOUS SISTEM, physiology.

in hyperthyroidism in hot climate (Rus)

(KHPERTHEROIDISM, physiology.

GES, in hot climate (Rus)

(CLIMATE,

GNS funct, in hyperthyroidism in hot environment (Rus)

Topography of skin tepmerature in thyrotoxicosis patients. Probl.
endok.i gorm. 5 no.5:67-72 S-0 '59. (MIRA 13:5)

1. Is kafedry gospital noy terapii (sav. - chlen-korrospondent
AMN SSSR prof. Z.I. Umidova) lechebnogo fakul teta fastentskogo
gosudarstvennogo meditisnskogo instituta.

(HYPHHTHYROIDISM physiol.)
(BODY TEMPERATURE)

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FEDOROVA, P. I., Doc Med Sci -- "Basedow's disease under hot-climate conditions." (Clinical physiological study)."

Tashkent, 1961. (Min of Health UzSSR. Tashkent State Med Inst) (KL, 8-61, 258)

- 423 -

FEDOROVA, P.I.; AVAKIMOVA, L.A., red.; TSAY, A.A., tekhn. red.

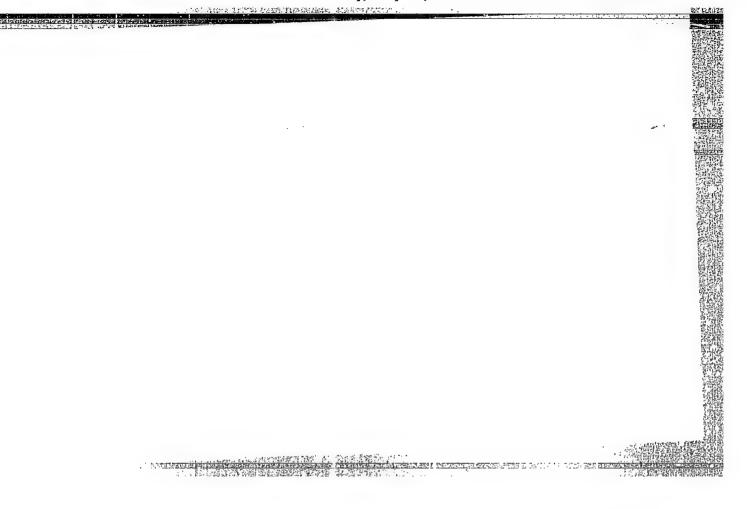
[Thyrotoxicosis (Basedow's disease) in a hot climate]
Tireotoksikoz (basedova bolezn') v usloviiakh zharkogo
klimata. Tashkent, Medgiz UzSSR, 1963. 194 p.
(MIRA 17:3)

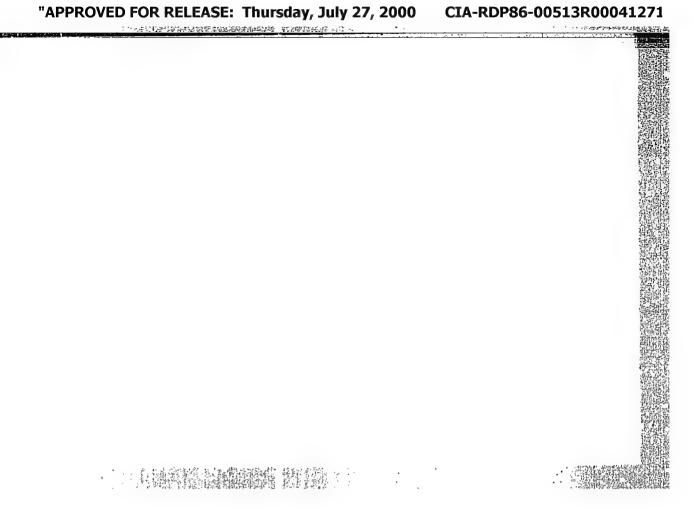
ANTIPOV, V.G. [Antsipau, V.H.]; FEDOROVA, R. [Fiodarava, R.]

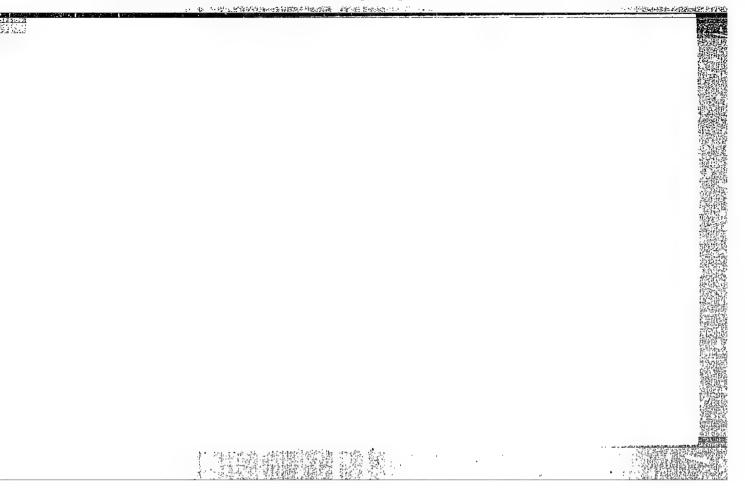
Coniferous exotic plants in Kaliningrad Province. Vestsi AN

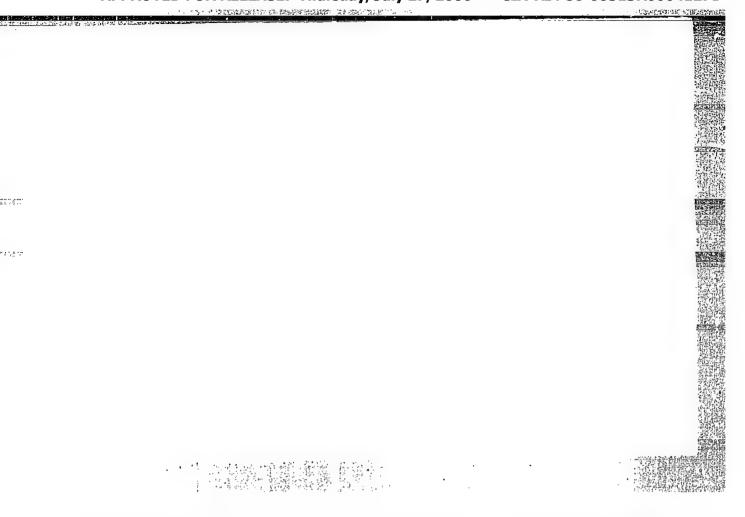
BSSR. Ser. biial. nav. no.4:34-39 163.

(MI.A 17:8)









Gontrast examination of the unchanged heart and large vessels in anterior projection with the patient in a horizontal position.

Khirurgiis 33 no.12:60-65 D '57. (MIRA 11:2)

1. Is fakul'tetskoy khirurgicheskoy kliniki (zav. - prof. A.M.

Bakulev) i kafedroy rentgenologii i radiologii (zav. - prof. V.A.

D'yachenko II Monkovskogo gosudarstvennogo meditsinskogo instituta imeni M.I.Pirogova.

(CARDIOVASCULAR SYSTEM, radiography

anterior projection of heart & large vessels in horizontal position)

FEDOROVA, R.G., Cand Med Sci -- (diss) "Contrast study of the unchanged heart and master vessels with the patient in the horizontal position." Mos 1958 12 pp. (Second Mos State Med Inst im N.I. Pirogov) 200 copies (KL, 21-58, 93)

- 73 -

IVANITSKAYA, M.A.; FEDOROVA, R.G.

Angiocardiographic examination of the unchanged heart and main vessels [with summary in English]. Vest.rentg. i rad. 33 no.1:6-12 vessels [with summary in English]. Vest.rentg. i rad. 33 no.1:6-12 vessels [with summary in English]. Vest.rentg. i rad. 33 no.1:6-12 (MIRA 11:4)

Ja-F '58.

1. Is fakul'tetskoy khirurgicheskoy kliniki imeni S.I. Spasokukotskogo (rav.-prof. A.B. Bakulev) i is kafedry rentgenologii (rav.-prof. v.A. D'yachenko) II-go Moskovskogo meditainskogo instituta imeni N.I. Pirogova.

(ANGIOCARDIOGRAPHY,

in normal cond. (Rus)

(ANGIOCARPHI,

great vessels, in normal cond. (Rus)

FREYDLIN, L.Kh.; SLADKOVA, T.A.; KUDRYAVTSEV, G.I.; SHEYN, T.I.; AIL'BERMAN, Ye.N.; FEDOROVA, R.G.

Catalytic hydrogenation of aromatic nitriles and the properties of polyamides obtained from p-(3,3 -diaminodiethylbenzene). Izv. AN SSSR. Otd.khim.nauk no.9:1713-1715 S '61. (MIRA 14:9)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR i Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna. (Nitriles) (Hydrogenation) (Polyamides)

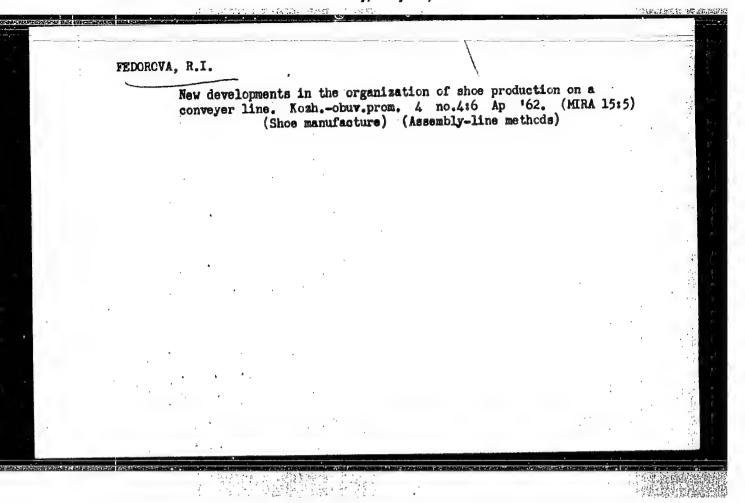
KHOMYAKOV, Yu.S.; FEDORCVA, R.G. Diagnosis of multiple primary malignant tumors. Sov. med. 25 no.2:121-123 F '62. (MIRA 15:3) 1. Iz kafedry rentgenologii i radiologii (zav. - prof. V.A. D'yachenko) II Moskovskogo meditsinskogo instituta imeni N.I. Pirogova. (CANCER-DIAGNOSIS)

FEDOROVA, R.C. (Moskva, I-45, Pechatnikov perculok, d.21, kv.21)

Change in the tracheal bifurcation angle in mitral stenosis;
I-ray observations. Grud. khir. 5 no.5:15-18 S-0 '63.

(MIRA 17:8)

1. Iz kafedry rentgenologii i radiologii (sav. - prof. V.A. D'yachenko) II Moskovskogo meditsinskogo instituta imeni Pirogova.



ISAGULYANTS, V.I., akademik; POREDDA, Z.; FEDOROVA, R.I.

Synthesis of V-nitrocarboxylic acids and their esters using ion exchange resins as catalysts. Dokl. AN Arm. SSR 36 no.1:31-34 '63. (MIRA 17:1)

1. Akademiya nauk Armyanskoy SSR (for Isagulyants).

FEDOROVA, R.I.

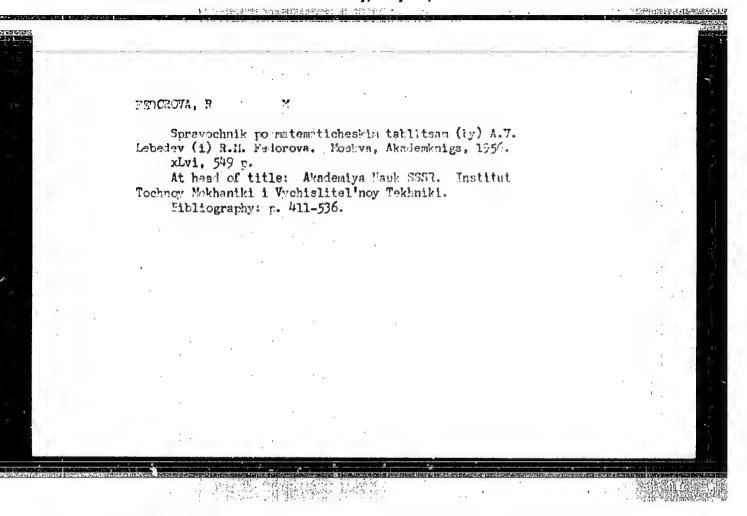
The effect of ultraviolet radiation upon microorganisms as a main external factor of cosmic medium

Report to be submitted for the 4th International Space Science Symposium (COSPAR) Warsaw, 2-12 June 63

UDALOVA, T.P.; FEDOROVA, R.I.

Effect of various nutrients on the gramicidin formation by Bacillus brevis var. G.-B. Mikrobiologiia 34 no.4:631-635 Jl-Ag *65. (MIRA 18:10)

1. Biologo-pochvennyy fakul tet Moskovskogo gosudarstvennogo universiteta imeni M.V.Lomonosova.



A guile to mathematical tables, by A.V. Letelev and R.M. Felorova. New York, London, Pergamon Press, 1,60.

xlvi, 506 p.

Translated from the original Russian: Sprayochnik po matematicheskim tablitsan, Noscow, 1956.

References: p. 411-586.

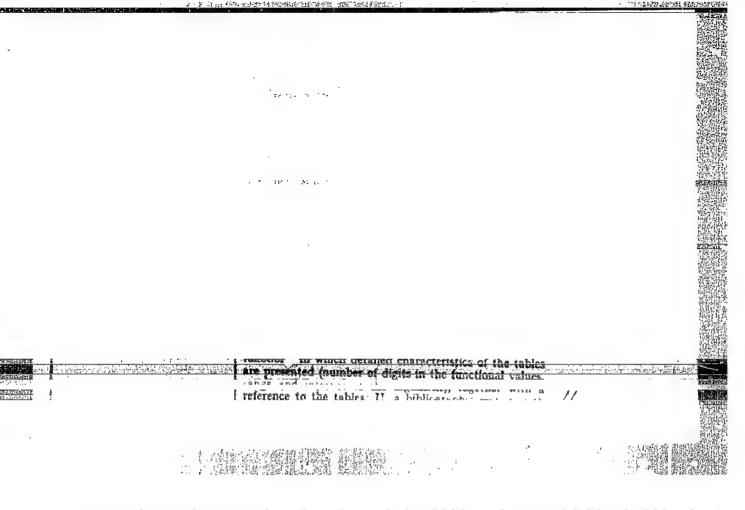
LUZAN, P.P.; Prinimali uchastiye: FEDOROVA, R.I.; LISTOVNICHAIA, S.P.; SHEVCHENKO, R.V.

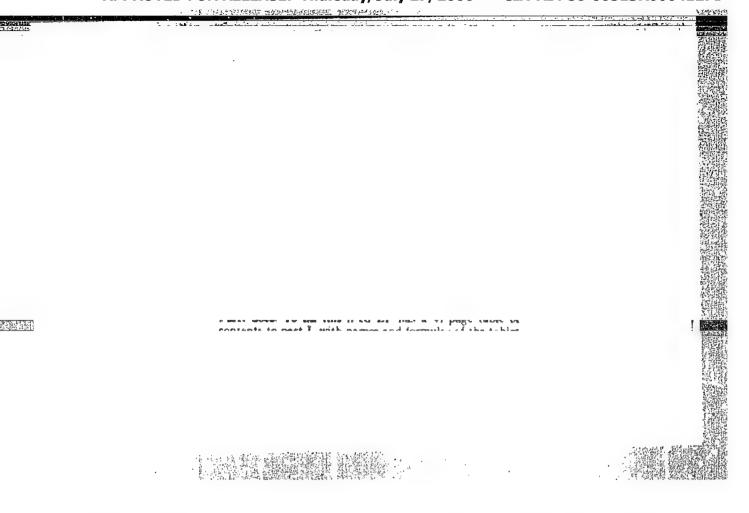
Effect of pig iron properties on the porosity of the working surface of tractor liners. Lit. proizv. no.6:27-29 Je '6i.

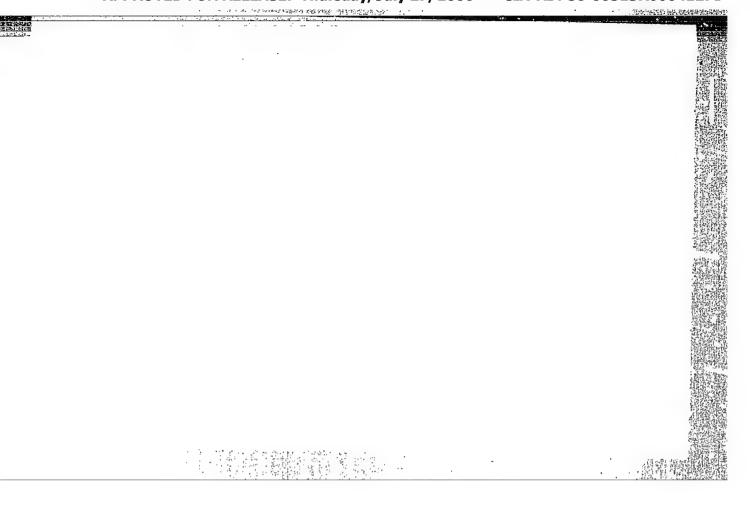
(MIRA 14:6)

1. TSentral'naya zavodskaya Laboratoriya zavoda im. Lepse (for Fedorova, Listovnichaya, Shevchenko).

(Cast iron—Metallography)





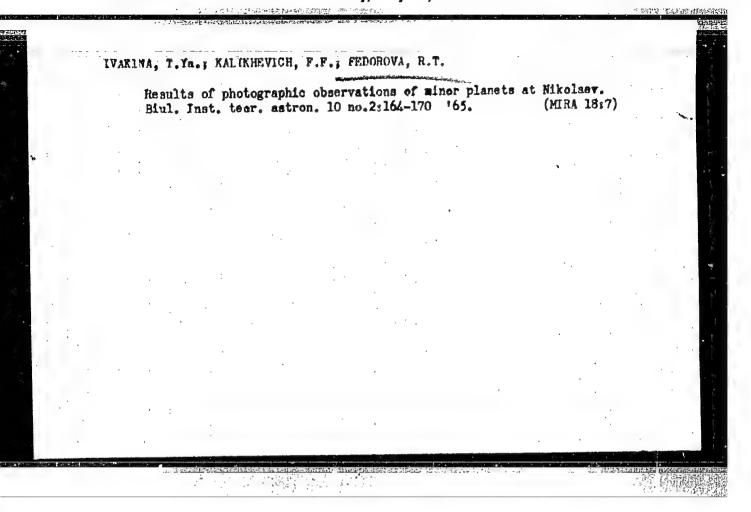


Isotopy of surfaces of the 2d order in Lobschevskii's geometry.
Soob. AN Gruz. SSR 20 no. 2:137-142 F '58. (MEMA 11:7)

1. Predstavleno chlenom-korrospondentom AN GruzSSR G.S.Chogoshvili.
(Surfaces)
(Geometry, Infinitesimal)

BROVENKO, V.Ya.; KALININA, O.F.; MARKINA, O.T.; PETROV, G.M.; FEDOROVA, R.T.

Right ascensions of bodies of the solar system determined from observations with the Freiberg-Kondrat ev transit circle in Nikolayev in 1961. Izv. GAO 23 no.4:82-90 '64. (MIRA 17:9)



5/081/62/000/016/022/043 B168/B186

AUTHORS:

Fedorova, R. V., Kogan, M. I., Belova, O. D.

TITLE:

Vapor-phase condensation of acetone with formaldehyde in

methylvinylketone. Summary

PERIODICAL:

Referativnyy zhurnal: Khimiya, no. 16, 1962, 384, abstract 16L11 (Tr. Vses. n.-i. vitamin. in-t, v. 7, 1961, 54-59)

TEXT: The authors studied the production of methylvinylketone (I) by condensation of industrial formalin (II) and chemically pure acetone (III). This was achieved by a vapor-phase reaction on higher oxides of rare earths, acid clays (e.g. gumbrin, kill) and industrial catalysts (e.g. Cd-Ca phosphate, Ca phosphate), performed, in a flow type lateratory apparatus at from 280 to $450-500^{\circ}$ C ($\leq 400^{\circ}$ C preferable) at volume velocities from 100 to 1000-2000 1 gaseous III per 1 1 catalyst per hour, with 45-50 ml catalyst and a molar ratio of II: III = 1: 1. The composition of the reaction mixture was determined analytically (e.g. I by Kaufman's method, II by reaction with dimedon, etc.), and that of gaseous products with a BTH-2 (VTI-2) gas analyzer. Catalysts are listed, and the

Card 1/2

Vapor-phase condensation of ...

S/081/62/000/016/022/043 B168/B186

following respective values are given for optimum reaction temperature in °C, yield of I per throughput of III in %, yield of I per input of I into the reaction in %, productivity in g per 1 l catalyst per hr: Ca phosphate, 420, 26.6, 93.7, 306; higher oxides of rare earths, 375-380, 36, 100, 325; higher oxides of rare earths on a carrier, 515, -, ~100, 565; silica gel, promoted with KOH, -, 39.1, ~100, 22. Graphs are given for productivity of I depending on temperature, catalyst and volume velocity. [Abstracter's note: Complete translation.]

Card 2/2

FEDOROVA, R.V.

Distribution of grain pollen by air. Dokl.AM SSSR 107 no.6:897-898 Ap 156. (MLRA 9:8)

1. Institut geografii Akademii nauk SSSR. Predstavleno akademikom V.N. Sukachevym. (Pollen) (Grain)

- 1. FEDOROVA, R. V.
- 2. USSR (600)
- 4. Peat Bogs Mozhaysk District
- 7. Origin of the "Toporkovskoye" peat bog in the Mozhaysk District of the Moscow Province. Trudy Geog. st. "Krasnovidovo" no. 1, 1948.

9. Monthly List of Russian Accessions, Library of Congress, March 1953. Unclassified.

FEDOROVA, R.

Works on the All-Union Peat Institute, (Min of Agri, RSFSR)

Number 5, 1933, 108 pages, A Compendium of Instructions on the Study of Peat & Peat Bogs:

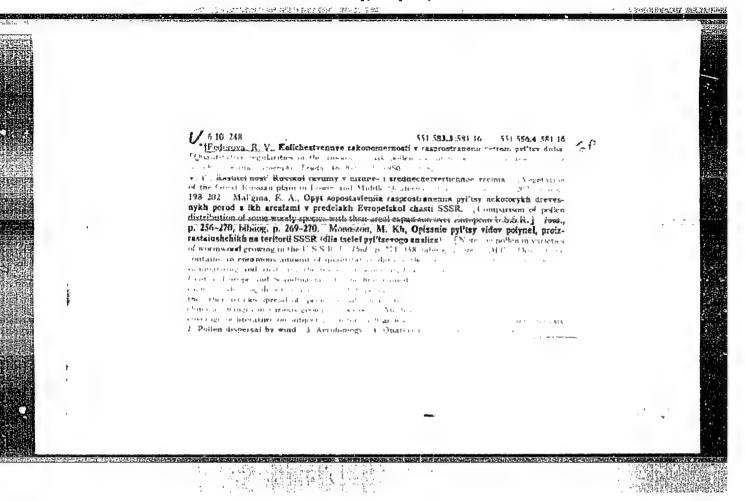
Part 2. Field Geobotanical Studies:

"Brief Instructions on Determining the Amount of Stumps in Peat Bogs" by Kobzikov and Fedorova, R.

SO: Botanicheskiy Zhurnal, Vol XXXV, No 1, pp 100-110, Jan-Feb 1950, Russian bimo per, Moscow/Leningrad (U5511, 12 Feb 1954).

"APPROVED FOR RELEASE: Thursday, July 27, 2000

CIA-RDP86-00513R00041271



FEDOROVA, R. V.

"Problem Concerning the Propagation of Hornbeam and White Beech (Carpinus) in Post-Glacial Times in European USSR," Problemy Fizicheskoy Geofrafii (Problems of Physical Geography), Vol. 16, Symposium, Moscow, 1951.

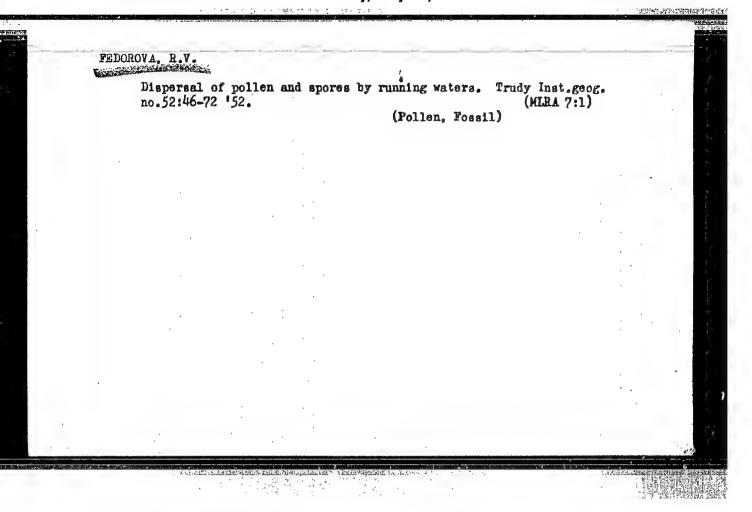
U-1483, 25 Sept 51

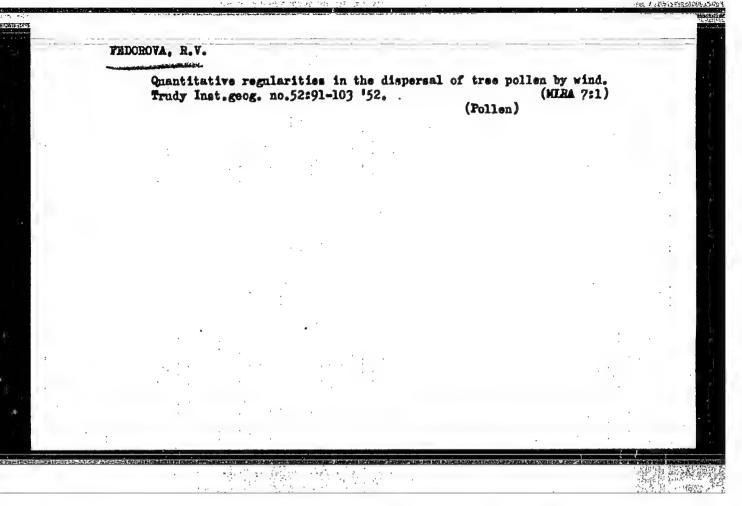
FEDOROVA, R. V.

"Paleobotanic Research in Estuary Deposits of the Caspian Depression," Trudy Inst. geog., AN SSSR, No.50, 1951

"History of the Buzuluk Pine Woods Based on a Spore-Pollen Analysis of the Peat Bog 'Pobochnoye'," ibid.

"Influence of Conditioning Methods on the Size of Pollen Grain of Various Species of Pinus," ibid.





- 1, FEDOROVA, R. V.
- 2. USSR (600)
- 4. Pellen
- 7. "Data on the drift of arboreal pellon north of the timber line." Tikhomirev, B.A. Isv. Vses. goog. obshch. 84 no.5, 1952

9. Monthly List of Russian Accessions, Library of Congress, January 1953. Unclassified.

FEDOROVA, R.V.

Dissertation: "Forest Phases in the Plant Cover of the Yergeniy Mountains and Stavropol' in the Late Holocene (According to the Data of Spore-Dust Analysis)." Cand Geog Sci, Inst of Geography, Acad Sci USSR, Moscow, 1953. (Referativnyy Zhurnal Geoligiya Geografiya, Moscow, Aug 54)

SO: SUM 393, 28 Feb 1955

PEDOROVA, R.V. On the origin of knolly bogs. Bot. zhur. 38 no. 4:584-589 J1-Ag 153. (MIRA 6:9) 1. Institut geografii Akademii nauk SSSE, Moskva. (Peat bogs)

FEDOROVA, R.V.

Forest phases in the Yergeni Hills and Stavropol Plateau during the late Holocene period. Trudy Inst. geog. no.63:57-127 '55. (MISL 8:6)

(Yergeni Hills--Pollen, Fossil) (Stavropol Plateau--Pollen, Fossil) (Yergeni Hills--Spores (Botany), Fossil) (Stavropol Plateau--Spores (Botany), Fossil)

JEDOROVA, R.V.

Atmospheric dispersal of pollen of certain grassy plants.

Isv.AN SSSR Ser.geeg.no.1:104-109 Ja-F 156. (MLRA 9:7)

1.Institut geogri f2.1 AN SSSR.

(Pellen)

GRICHUK, V.P.; FEDOROVA, R.V.

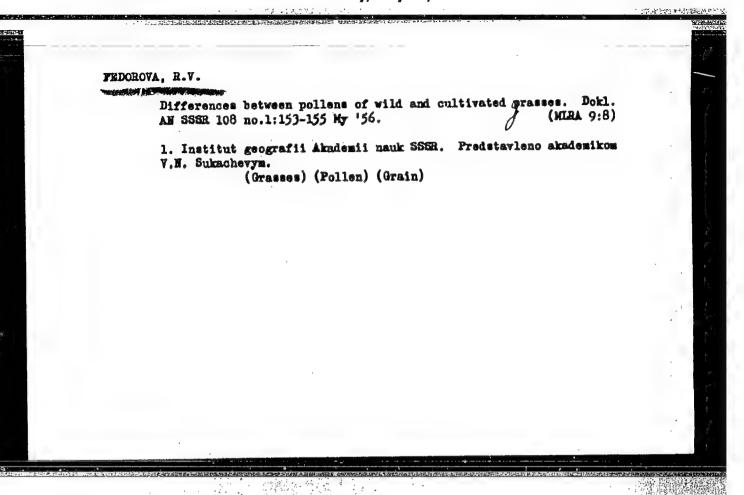
Characteristics of periglacial vegetation of the Quaternary period in the north of the Asiatic Continent. Izv.AN SSSR.Ser.geog. no.2: 66-71 Mr-Ap '56. (MLRA 9:8)

1. Institut geografii AN SSSR. (Asis--Paleobotany)

FEDOROVA, R.V.

Distribution of grain pollen by air. Dokl.AN SSSR 107 no.6:897-898 Ap '56. (MLRA 9:8)

1. Institut geografii Akademii nauk SSSR. Predstavleno akademikom V.E. Sukachevym. (Pollen) (Grain)



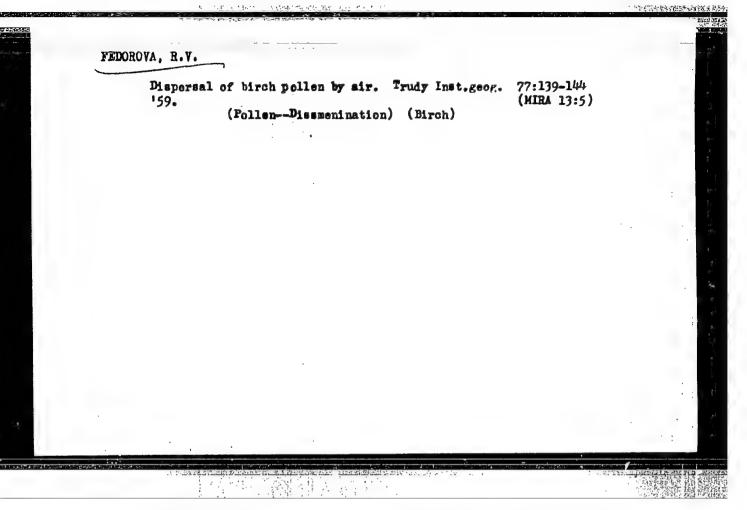
FEDOROVA, R.V.

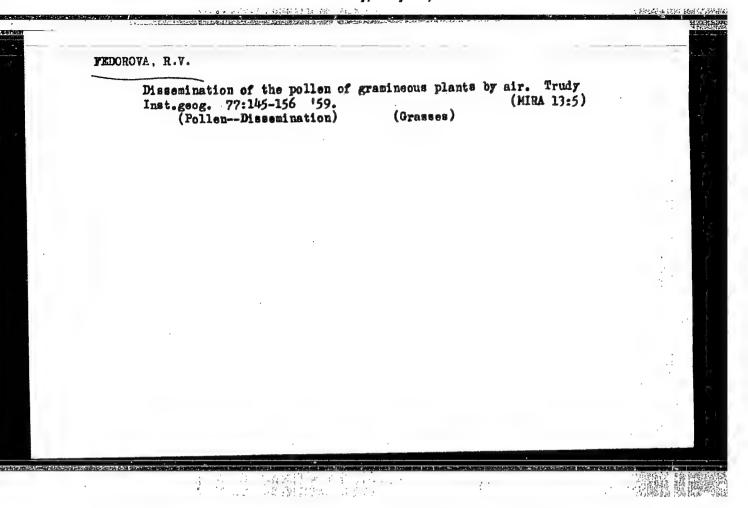
"Recent trends in palynology" [in English] by K.Faegri. Reviewed by R.V. Fedorova. Bot. zhur. 43 no.7:1054-1056 J1 '58. (MIRA 11:9)

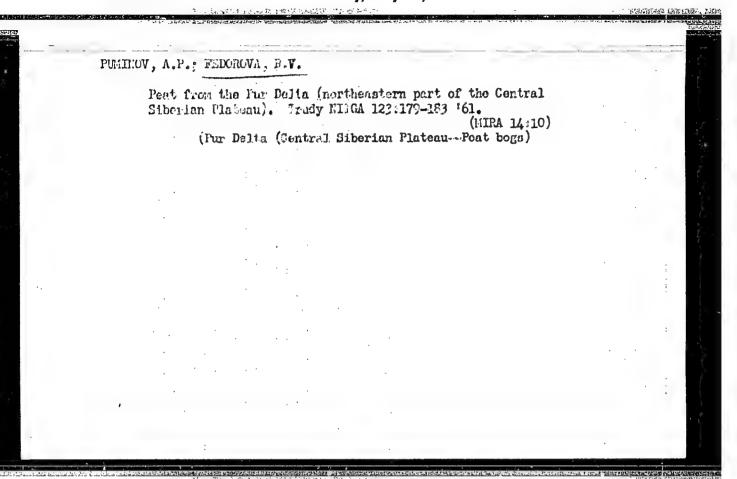
1. Institut geografii Akademii nauk SSSR, Moskva.
(Palynology)
(Faegri, K.)

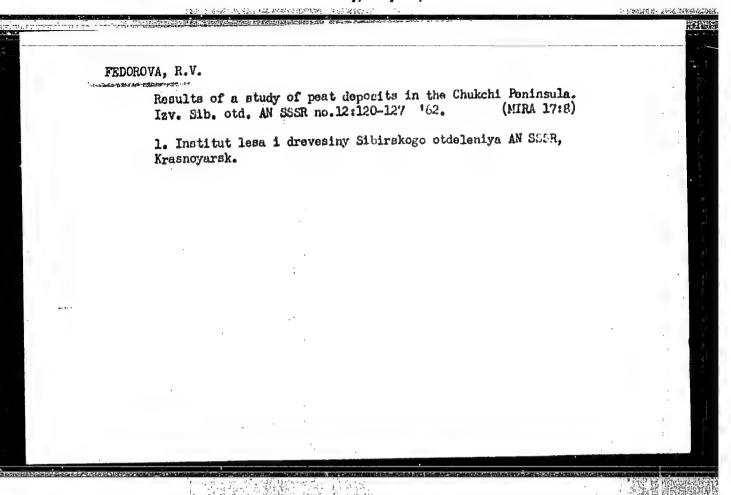
FEDOROVA, Reisa Vasil'yayna, kand.geograf.nauk; SHCHERBIHOVSKAYA,
T.H., red.; NOOINA, W.I., tekhn.red.

[Searchers of the sun's treasures] Iskateli solnechnykh kladov.
Moskva, Gos.izd-vo geogr.lit-ry, 1959. 183 p. (MPA 13:3)
(Russia, Northern—Description and travel)







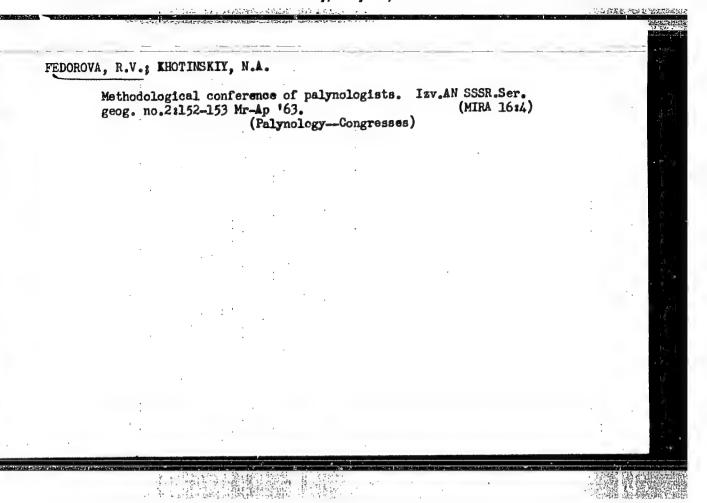


KORZHUYEV, S.S.; FEDOROVA, R.V.

The Chekurovka mammoth and its life conditions. Dokl. AN SSSR 143 no.1:181-183 Mr. 162. (MIRA 15:2)

1. Institut geografii AN SSSR. Predstavleno akademikom V.N.Sukachevym.

(Chekurovka Region-Mammoth)



NAUMOVA, Ye.K., dots.; SHAMSUTDINOV, N.5., assistent; FEDOROVA,S.A.:
RYABOVA,N.I.; CBANOVA, V.P.; KOKSINA,K.D. (Kazan')

Fighting diphtheria in the country; abstract. Kax.med.zhur.
no.1:113 Ja-F*61 (MIRA 16:11)

VORONOVA, N. A.; FEDOROVA, S. A.; TKACH, N. T.

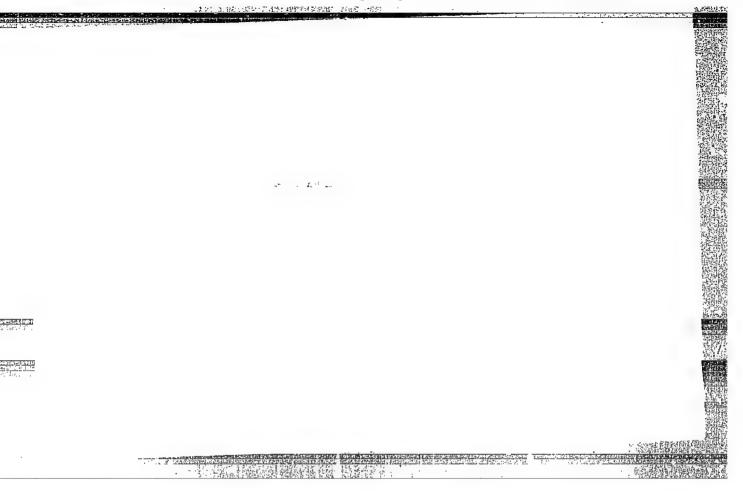
Cast iron with bainite structure for making cylindrical pebbles.

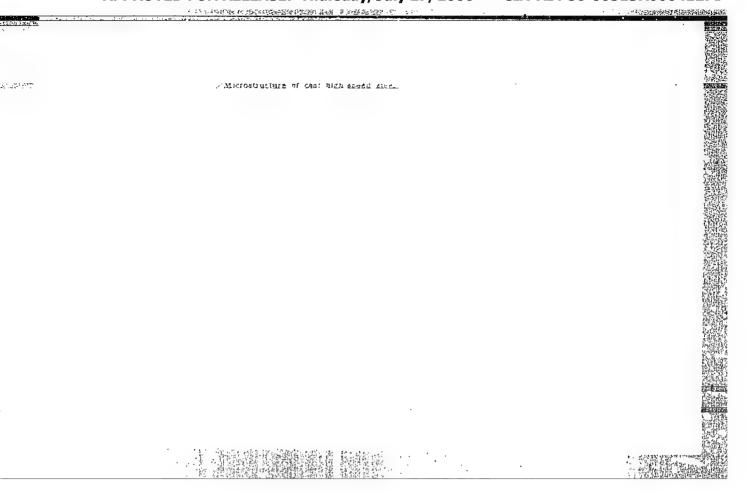
Trudy Giprotsement no. 26:54-62 '63. (MIRA 17:5)

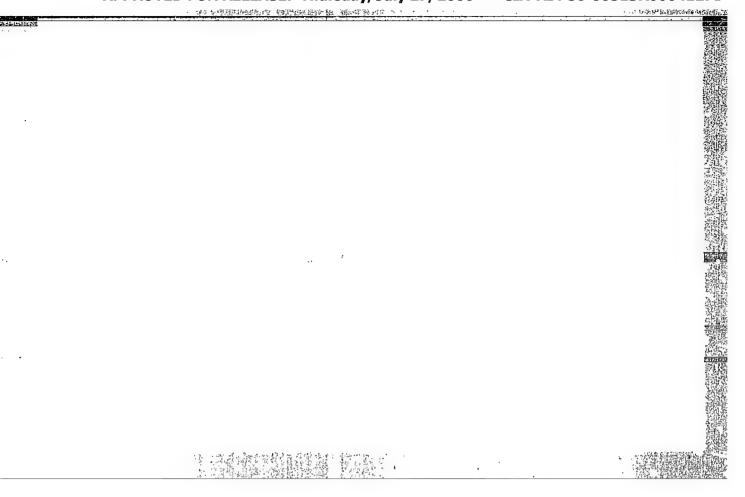
NEMSHILOVA, N.A. [deceased]; KULIKOVA, Ye.N.; VAYMAN, Ye.I.; YAKOBSON, D.A.; KUZ'MINA, Yu.T.; FEDOROVA, S.A.; CSANOVA, V.P.; BLINOVA, L.L.; RYABOVA, N.I.

Distribution of enteropathogenic Escherichia coli among various population groups in Kazan and some cities of the Tatar A. S. S. R. Zhur. mikrobiol., epid. i immun. 41 no.9:145-146 S 64. (MIRA 18:4)

l. Kazanskiy institut epidemiologii, mikrobiologii i gigiyeny i Tatarskaya respublikanskaya sanitarno-epidemiologicheskaya stantsiya, poliklinika No.2.



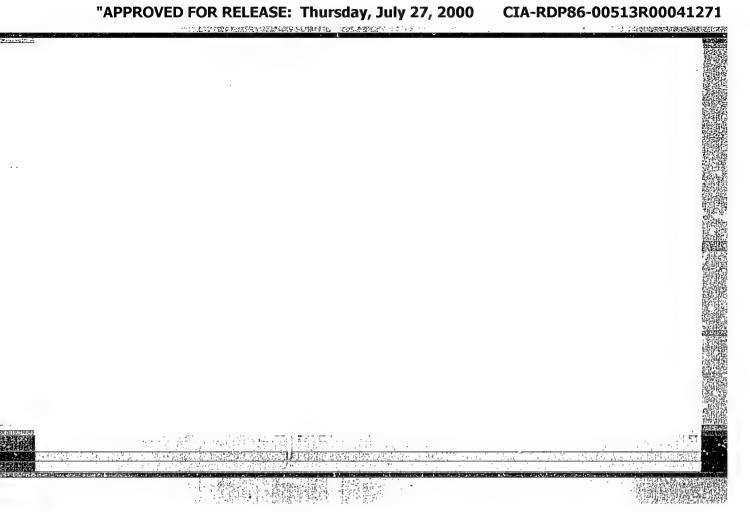




FEDOROVA, S.A., DOGADKIN, B. A., SANDOVIRSKIY, D. M., KHELLER, T. Y., TSVETKOV, A. J., BAKSHT, O. V., And RASHIVAHINA, K. Y.

"Oxidation of Buna in solution," a paper presented at the 9th Congress on the Chemistry and Physics of High Polymers, 28 Jan-2 Feb 57, Moscow, Moscow Polytechnic Institute.

B-3,084,395



FEDOROVA, S.A.

20-2-23/62

AUTHOR:

Bunin, K.P., Koval'chuk, G.Z., Fedorova, S.A.

TITLE:

On the Mechanism Underlying the Influence of Surface Oxidation upon the Graphitization of Iron Alloys (O mekhanizme vliyaniya poverkhnostnogo okisleniya na grafitizatsiyu zheleznykh splavov)

PERIODICAL:

Doklady Akademii Nauk SSSR, 1957, Vol. 115, Nr 2, pp. 281 - 283

(USSR)

ABSTRACT:

Perlite wrought iron with 2,80 % C and 0,91 % Si served as initial material for the tests. The cylindrical samples (20 mm of diameter and 6 mm of height) were cut out from dense fragments. (These fragments had been cast at an elevated feed). When the samples are subjected to further graphitization at 700 C, no new graphite inclusions form, but the carbon of the perlite cementite settles in layers in the form of graphite on the surface of the graphite inclusions occurring in iron. After 1, 2, 3, 5, 8, 15, 19 and 24 hours the samples were taken out of the furnace, cooled in the air and investigated under the microscope. The decrease in the quantity of cementite in graphitization was determined by chemical analysis and by measurement of the hardness and the coercive

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20-2-23/62

On the Mechanism Underlying the Influence of Surface Oxidation upon the Graphitization of Iron Alloys

force. With the aid of these data the half life of the decomposition of the sutectoid cementite was determined, and the corresponding data summarized in a table. Two series of samples were investigated: As regards the samples of the first series their surface was cleaned of slags, the samples of the other series had in the initial state an oxidized surface.

On the exidation of the samples the graphitization is also greatly increased in the case that the number of graphite inclusions is not increased. The data obtained here can easily be explained when the nature of the exidation is brought into connection with the increase in the equilibrium concentration of the vacancies in the surface zone (due to the "facilitated" distance of the surface ions of iron in the presence of exide layers). With increasing gradient of the concentration of the vacancies their diffusion into the depth is accelerated. The speed of the diffusion-like transfer into the interior can be strongly influenced by variation of the character of the outer medium and by modification of the surface concentration. There are 1 table and 5 Russian references.

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20-2-23/62

On the Mechanism Underlying the Influence of Surface Oxidation upon the Graphitization of Iron Alloys

ASSOCIATION:

Institute of Ferrous Metallurgy Academy of Sciences, Ukrainian SSR

(Institut chernoy metallurgii Akademii nauk USSR)

PRESENTED BY: G.V. Kudryumov, Academician, March 9, 1957

AVAILABLE:

Library of Congress

Card 3/3

FERUKUYA -. 7 507/21-58-10-10/27 Bunin, K.P., Corresponding Member of the AS UkrSSR, Voytse-AUTHORS: lenok, S.L. and Fedorova, S.A. The Eutectoid Transformation of Austenite in Malleable Cast TITLE: Iron (Evtektoidnoye prevrashcheniye austenita v kovkom chugune) Dopovidi Akademii nauk Ukrains'koi RSR, 1958, Nr 10, PERIODICAL: pp 1070 - 1074 (USSR) The present investigation was initiated to obtain, experi-ABSTRACT: mentally, quantitative data as to the position of various lines in the process of eutectoid transformation of austenite in malleable cast iron. The cast iron contained 2.90% C: 0.88% Si; 0.36% Mn and 0.09% S. The time needed for the beginning of segregation of ferrite and cementite and the time for completing the eutectoid decomposition of austenite and graphitization of eutectoid cementite was determined for various temperatures ranging from 755 to 600°C by means of a microscopic investigation of the hardened samples. The Card 1/2 position of the following lines was determined: of the be-

SOV/21-58-10-10/27

The Eutectoid Transfomation of Austenite in Malleable Cast Iron

ginning of eutectoid ferrite and carbid formation, of the end of eutectoid transformation and of the end of eutectoid carbide graphitization. The graph of isothermal transformation was plotted for austenite in malleable cast iron. There are 3 sets of photos, 1 graph and 5 references, 3 of which are Soviet, 1 Czech and 1 English.

ASSOCIATION:

Institut chërnoy metallurgii AN UkrSSR (Institute of Ferrous Metallurgy, of the AS UkrSSR)

SUBMITTED:

April 26, 1958

NOTE:

Russian title and Russian names of individuals and institutions appearing in this article have been used in the transliteration.

Cast iron--Analysis
 Austenite--Transformations
 Cast iron--Phase studies
 Cast iron--Test results

Card 2/2

BUNIN, K.P.; VOYTSELENOK, S.L.; FEDOROVA, S.A.

Butectic transformation of austenite in malleable cast iron.

Lit. proizv. no.l:43-44 Ja '59. (MIRA 12:1)

(Cast iron-Metallography)

FEDUKUTTY D.H.

18(3)

SOV/21-59-10-13/26

AUTHOR:

Bunin, K.P., Corresponding Member of the AS UkrSSR,

I.P. Horlova and S.A. Fedorova

TITLE:

The Kinetics of the Second Stage of Graphitization

of Cast Iron in Repeated Annealing

PERIODICAL:

Dopovidi Akademiyi nauk Ukrayins'koyi RSR, 1959, Nr 10,

pp 1106-1109 (USSR)

ABSTRACT:

The author conducted experiments using the data of experiments carried out by Reder and Wilson / Ref 1 /, in order to compare the speeds of the second stage of cast iron graphitization in the first and repeated annealing, as well as the contradictory data obtained in this respect by G.F. Tikhonov / Ref 2 /. The result of this study is that the eutectoid transformation of austenite into graphite and ferrite is accelerated in repeated annealing (which confirms the data of Reder and

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Wilson). This acceleration may be explained by the for-

SOV/21-59-10-13/26

The Kinetics of the Second Stage of Graphitization of Cast Iron in Repeated Annealing

mation of numerous pores in the matrix on the dissolution of graphite and on austinitizing during the repeated heating of cast iron up to a temperature of 950°C. There is much data, showing that the kinetics of graphitization is not controlled by the diffusion of carbon but by the processes of evacuation of matrix atoms. Therefore, in a porous matrix which is notable for an increased concentration of vacuums, and, consequently, for a higher self-diffusion rate, the increase in graphite will be speeded up. The acceleration of graphitization in the third, fourth, fifth and sixth annealing is defined in the paper of Reder and Wilson and may be connected with the additional formation of vacuums which appear in a cyclic processing of alloys containing graphite. From the data of Reder and Wilson and from that of the authors, it may be concluded that the lines of the diagram of

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SOV/21-59-10-13/26

The Kinetics of the Second Stage of Graphitization of Cast Iron in Repeated Annealing

isothermic transformation of austenite in cast irons / Ref 13,14 / Will change depending on the initial state of the samples. There is 1 graph, and 14 references, 8 of which are Soviet, 3 English, 2 French and 1 unidentified.

ASSOCIATION: Instytut chornoyi metalurhiyi AN URSR (Institute of Ferrous Metallurgy of the AS UkrSSR).

SUBMITTED: April,1, 1959

Card 3/3

FEDOROVA 5/021/60/000/002/008/010 A158/A029 **AUTHORS:** Bunin, K.P., Corresponding Member of the AS UkrSSR; Horlova, I.P.; Fedorova, S. A TITLE: Kinetics of Eutectoid Transformation of Austenite in Gray Laminated-Graphite Cast Irons PERIODICAL: Dopovidi Akademiyi nauk Ukrayins'koyi Radyans'koyi Sotsialistychnoyi Respubliky, 1960, No. 2, pp. 188 - 191 TEXT: This is a contribution to the study of the kinetics of isothermal decomposition of austenite into graphite and ferrite, differing as to the content of silicon. The authors establised the beginning of eutectoid graphite, ferrite and carbide formation from eutectoid austenite, the lines of the end of eutectoid transformation and the lines of the end of eutectoid carbide graphitization. Subjected to the experimental study were three cast iron grades of the following chemical compositions: C SI Mn 1.30% 0.12% 0.009% 0.12% 2.73% 0.10% traces traces 4.00% 0.09% traces 0.1% Card 1/4

S/021/60/000/002/008/010 A158/AC29

Kinetics of Eutectoid Transformation of Austenite in Gray Laminated Graphite Cast Irons

The two first cast iron grades were molten from "Armko"-iron, electrode graphite and silicon metal in a 40-kg induction furnace. Samples 60 mm in diameter and 150 mm long were cast into preheated sand molde. The third cast iron grade was molten in a high-frequency MBN-3M (MVP-3M) furnace and was crystallized in chromomagnesium crucibles in the form of samples 55 mm long and 30 mm in diameter. Cast samples were cut into 8 - 10 mm thick disks which were subsequently used for the preparation of 8 x 8 x 8 mm samples. Thermal treatment was done in two furnaces: one for austenization, the other for isothermal soaking in an overcooled state. Temperatures and times of austenization were different: 1 -880°C and $1\frac{1}{2}$ h for cast iron No. 1; 2 - 930°C and $1\frac{1}{2}$ h for cast iron No. 2 and $3 - 980^{\circ}$ C and $\frac{1}{2}$ h for cast iron No. 3. After soaking the samples were cooled (at a rate of 0.5°C per min) to the upper boundary of the interval of the stable eutectoid equibalance (760°C for the first cast iron, 820°C for the second and 900°C for the third). Then the samples were transferred into a thermostat furnace, cooled therin to a temperature below the above mentioned upper boundary, seasoned for a while and hardened in water. In the case of low-stability auste-

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S/021/60/000/002/008/010 A158/A029

Kinetics of Eutectoid Transformation of Austenite in Gray Laminated Graphite Cast Irons

nite temperatures the samples were first cooled in smolten salts (22.5% of NaCl + 77.5% of CaClo). The results of the experiments are shown graphically in graphs Nos. 1, 2 and 3 (respectively for the first, second and third cast iron grade). Lines 6B (BV) show the beginning of the formation of graphite, lines AO (DO) the beginning of the separation of the eutectoid ferrite and lines EM (EM) the beginning of the formation of the eutectoid iron carbide. Lines IMP (IMR) characterize the time required for the completion of the eutectoid decomposition of austenite. Lines MH (MN) indicate the time required for the completion of the graphitization of the eutectoid iron carbide. The results have shown that an increase in the content of silicon sharply raises the speed of decomposition of austenite into ferrite and graphite, the formation of iron carbide and the graphitization of the eutectoid iron carbide. This great influence of the content of silicon is explained by a speed-up of the growth of graphite and a widening of the front of its formation, caused by an increase in the content of graphite, accompanying an increased concentration of silicon. Consequently, the speed of formation of graphite in gray cast irons at subcritical temperatures is controlled

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S/021/60/000/002/008/010 A158/A029

Kinetics of Eutectoid Transformation of Austenite in Gray Laminated Graphite Cast Irons

rather by the processes of separation of atoms of the matrix away from the front of the formation of graphite, than by the diffusion of carbon. This conclusion is in agreement with the findings achieved by J. Romey, R. Lafont and L. Abel (Ref. 9), and by P. Laurent and M. Fonderie (Ref. 10). There are 3 figures and 12 references: 7 Soviet, 1 Polish and 4 English.

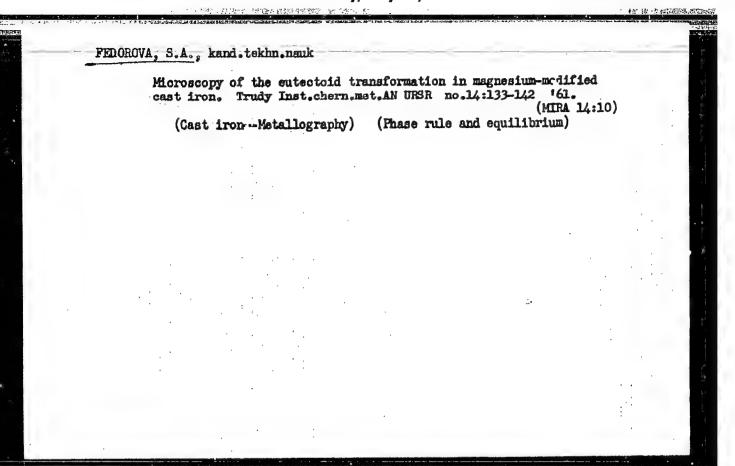
ASSOCIATION: Instytut chornoyi metalurgiyi (Institut of Ferrous Metallurgy) of the AS UkrSSR

PRESENTED: June 22, 1959

Card 4/4

BUNIN, K.P.; GORLOVA, I.P.; PEDOROVA, S.A.

Investigating the kinetics of sutsctoid transformations in cast iron. Lit.proisv. no.7:18-20 Je '60. (MIRA 13:7* (Cast iron--Metallography)



BUNIN, K.P.; FEDOROVA, S.A.; FEDOROVA, I.P.

Eutectoid transformation of austenite in phosphorus-bearing grey cast irons. Dop. AN URSR no.10:1295-1299 161.

(MIRA 14:11)

1. Institut chernoy metallurgii AN USSR. 2. Chlen-korrespondent AN USSR (for Bunin).

(Augtenite) (Cest iron-Metallurgy)

FEDOROVA, S.A., kand.tekhn.nauk

Causes of the microstructural heterogeneity in magnesium-modified and malleable cast iron. Trudy Inst. chern. met. AN URSR 18: 121-130 '62. (MIRA 15:9)

(Cast iron--Metallography)

BUNIN, K.P.; COLINSKAYA, V.Z. [Colins'ka, V.Z.]; FEDOROVA, S.A.

Effect of vanadium on the kinetics of eutectoid transformation of austenite in grey cast irons. Dop. AN URSR no.5:607-609 '63.

(MIRA 17:9)

1. Institut chernoy metallurgii AN UkrSSR. 2. Chlem-korrespondent AN UkrSSR (fer Bunin).

